

Figure 1: Synthesis of 4'-aminomethyl fluorescein, 4'-aminomethyl fluorescein-5-carboxylic acid, 4', 5'-bis-aminomethyl fluorescein, and 4', 5'-bis-aminomethyl fluorescein-5-carboxylic acid.

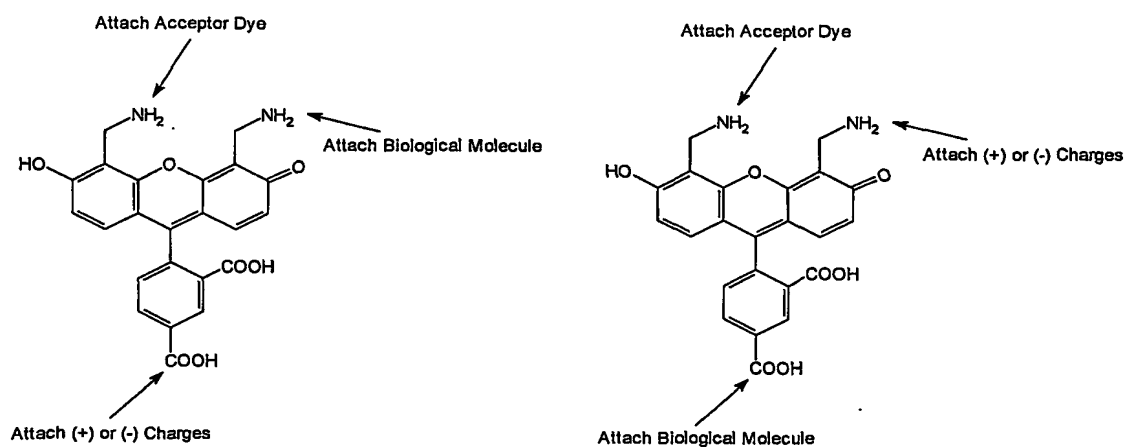


Figure 2: Possible sites for the attachment of various charges and biological molecules on 4', 5'-bis-aminomethyl fluorescein and its 5-carboxylic acid derivative.

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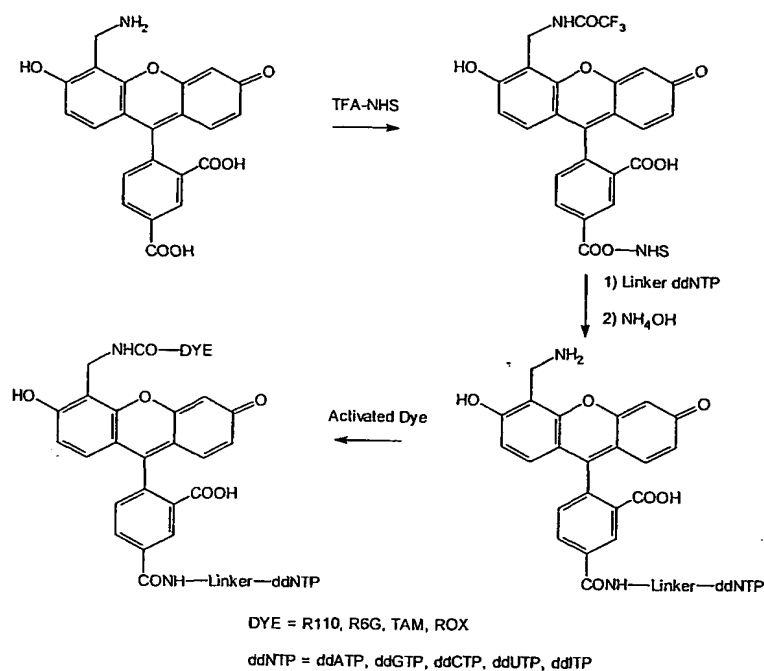


Figure 3: Synthesis of energy transfer dyes and terminators based on the 4'-aminomethyl-5-carboxylic acid structure.

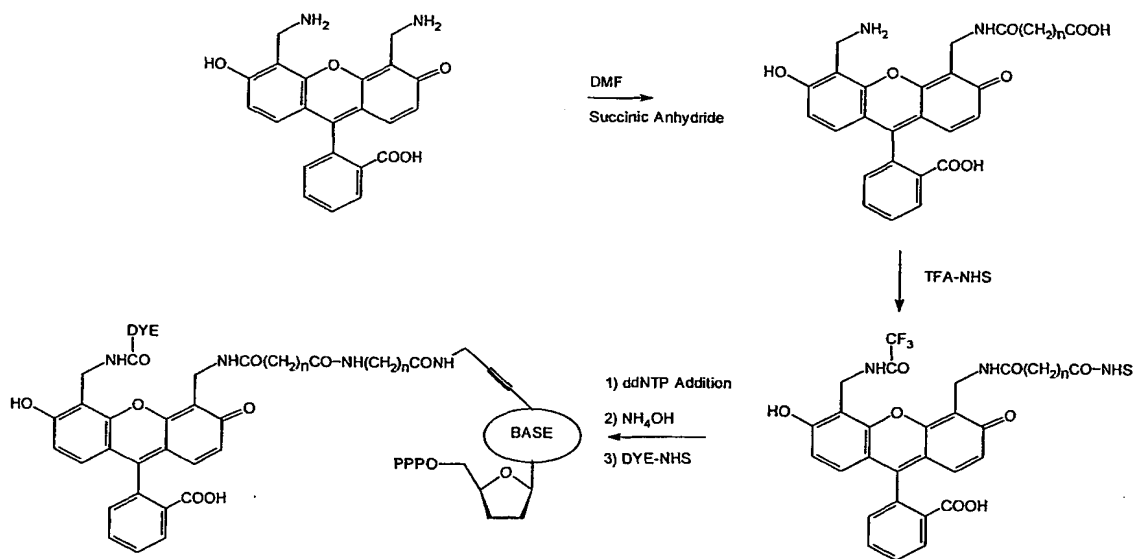


Figure 4: Synthesis of energy transfer dyes and terminators based on the 4', 5'-bis-aminomethyl fluorescein-5-carboxylic acid structure.

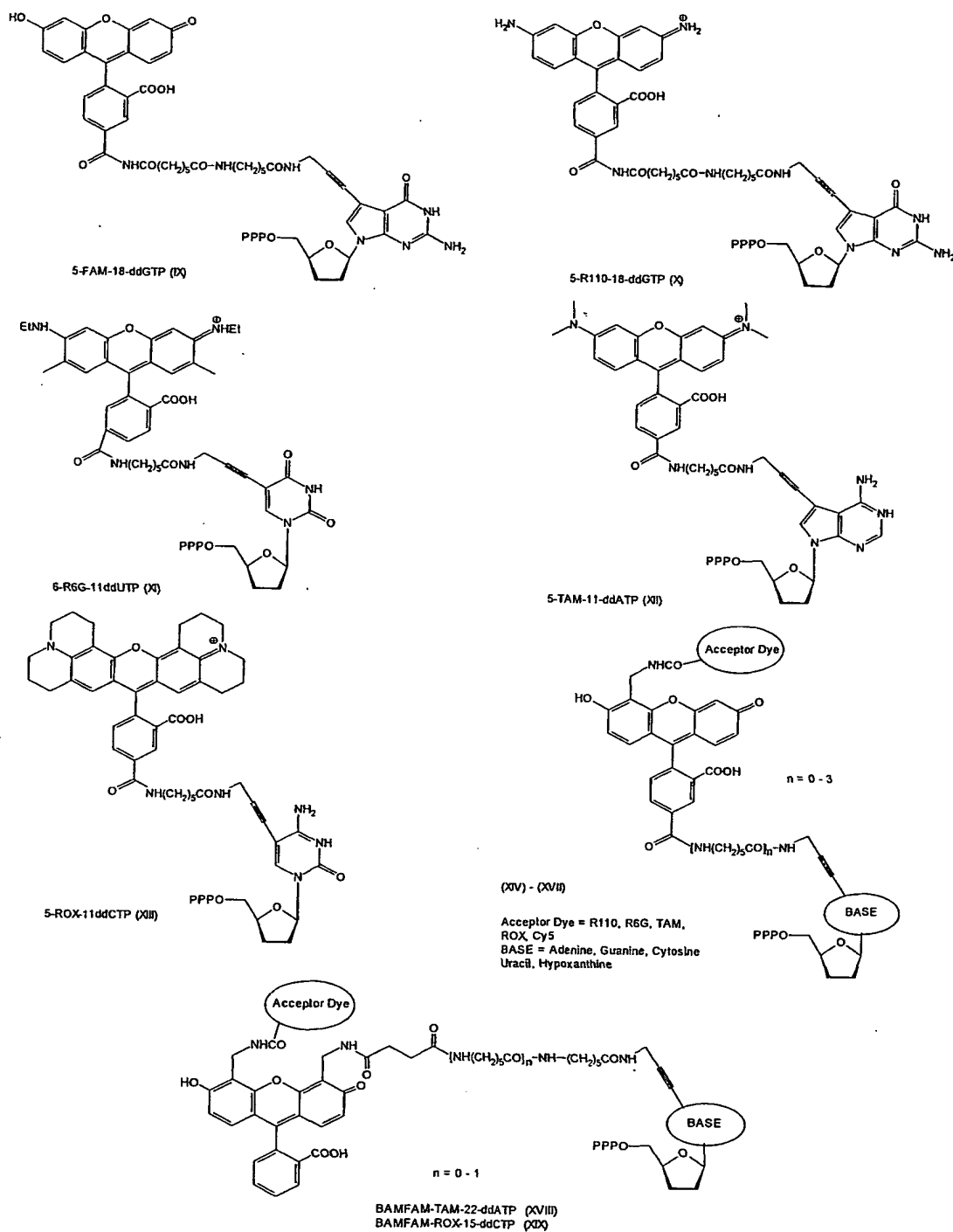


Figure 5: Structures of single dye labeled terminators and ET terminators of this invention.

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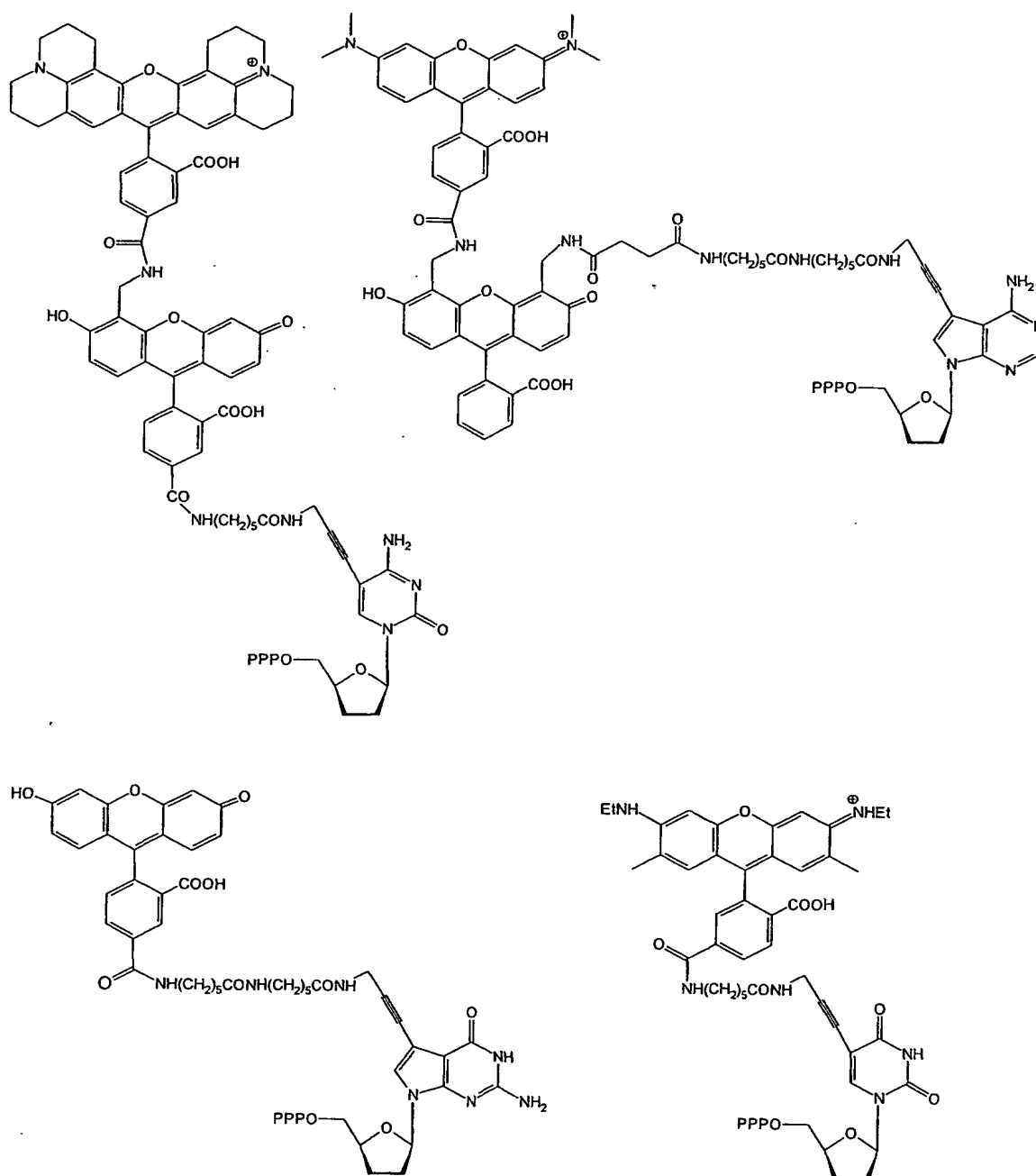


Figure 6: Preferred dye terminator set: Structures of 2 single dye terminators and 2 ET terminators of this invention.

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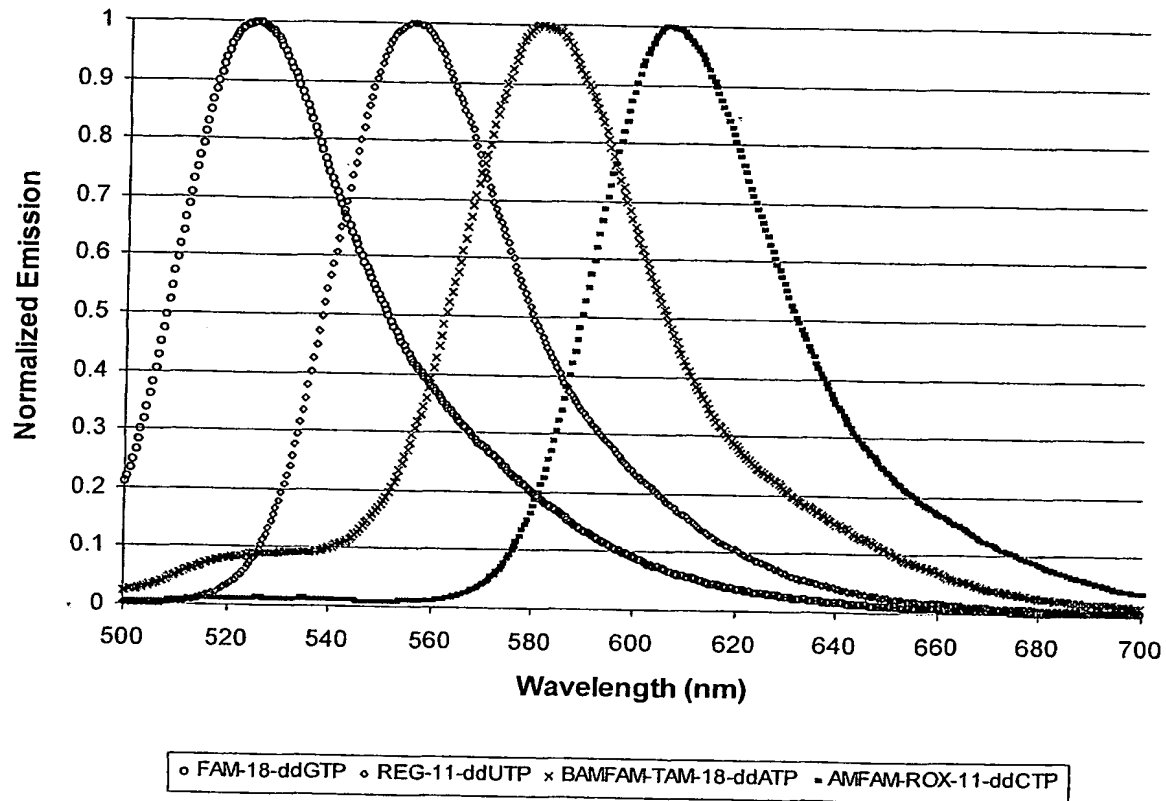
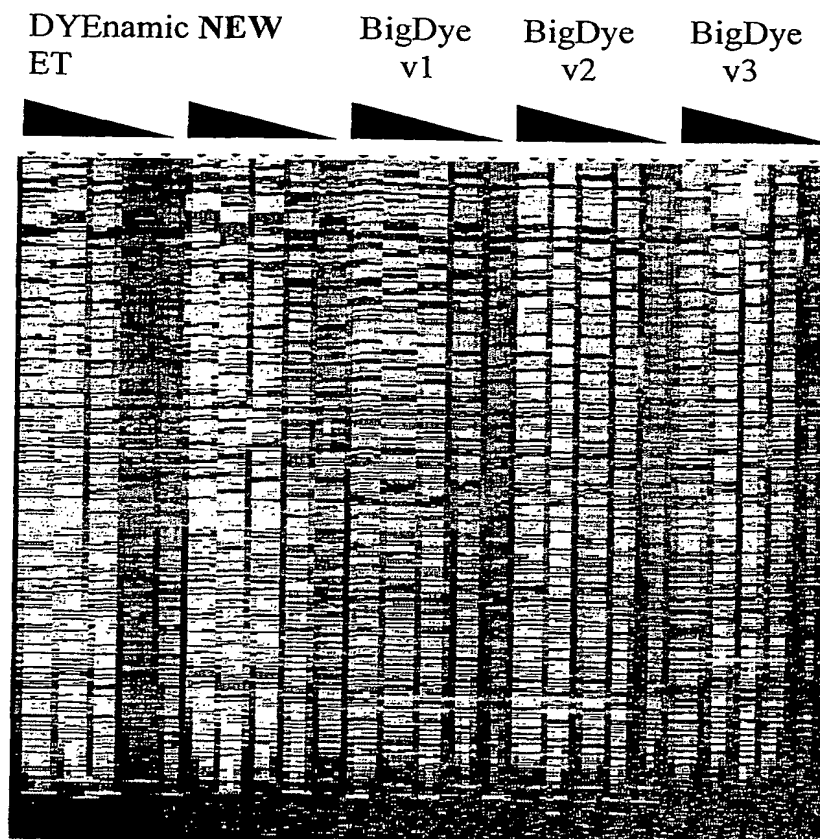


Figure 7: Normalized emission spectrum of the dye terminators optimized for DNA sequencing.

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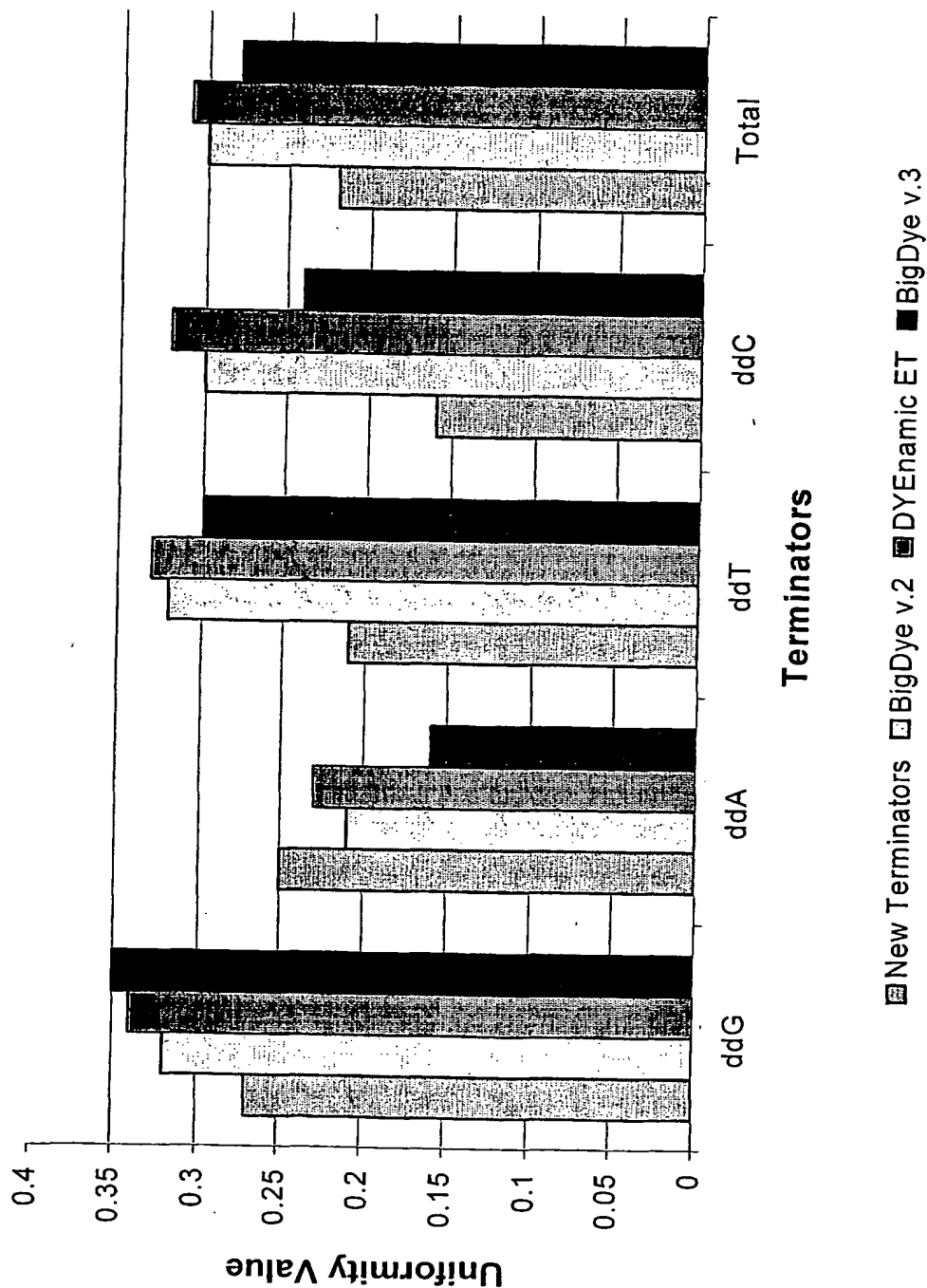
<u>Chemistry</u>	<u>Relative Brightness*</u>
BigDye v3	1
BigDye v1, v2	2
DYEnamic ET	4
NEW TERMINATORS	8

* Single extension from various template amounts as measured on the ABI 377

Figure 8: Comparison of relative brightness of sequencing bands generated using dye terminators of this invention with the other commercially available terminators.

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*As measured on the ABI 377

Figure 9: Uniformity of sequencing bands using terminators of this invention and their comparison with the existing commercial terminators.

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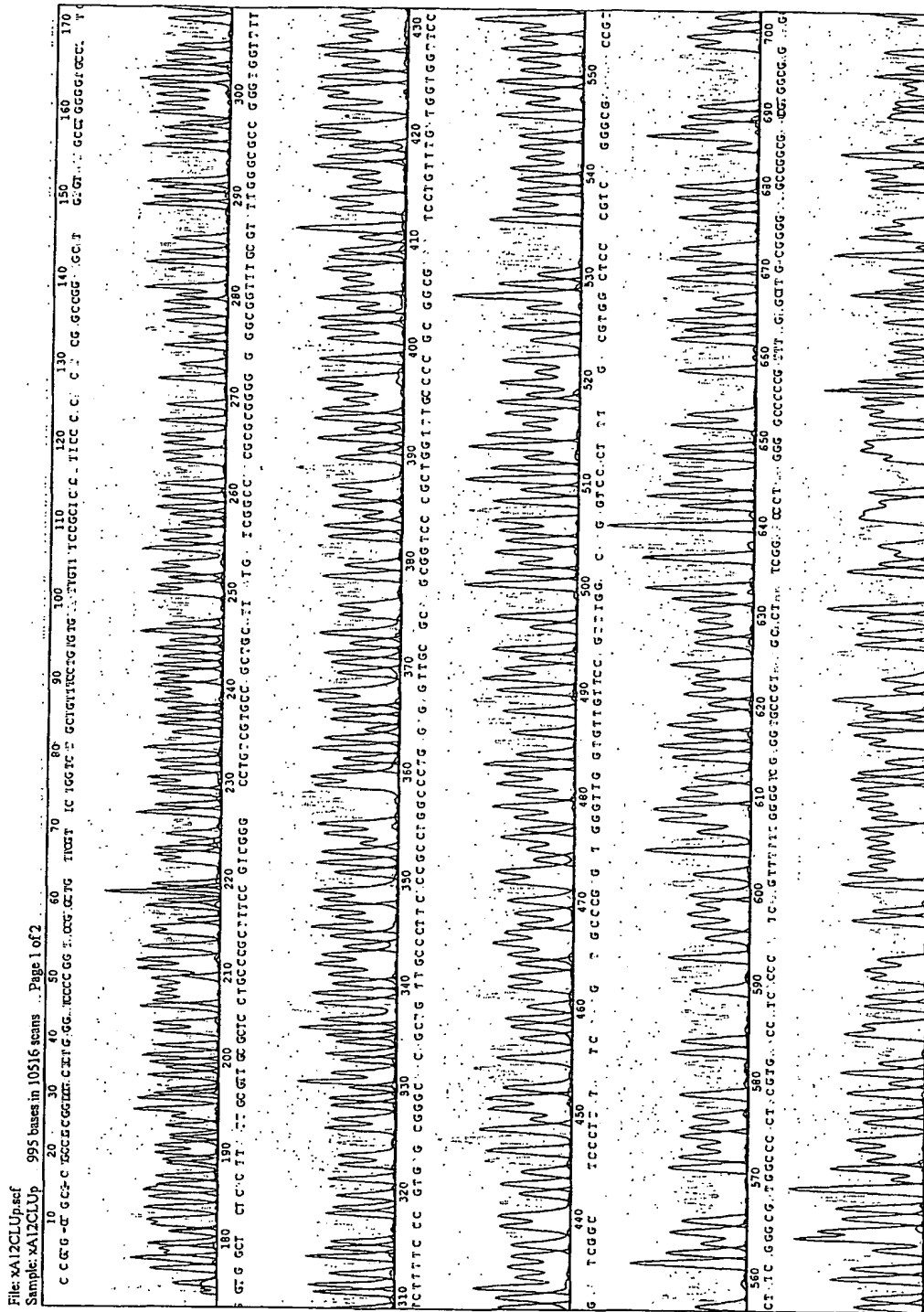


Figure 10: Sequencing data of DNA molecule from MegaBACE 1000 DNA analysis system using dye terminators described in this invention.

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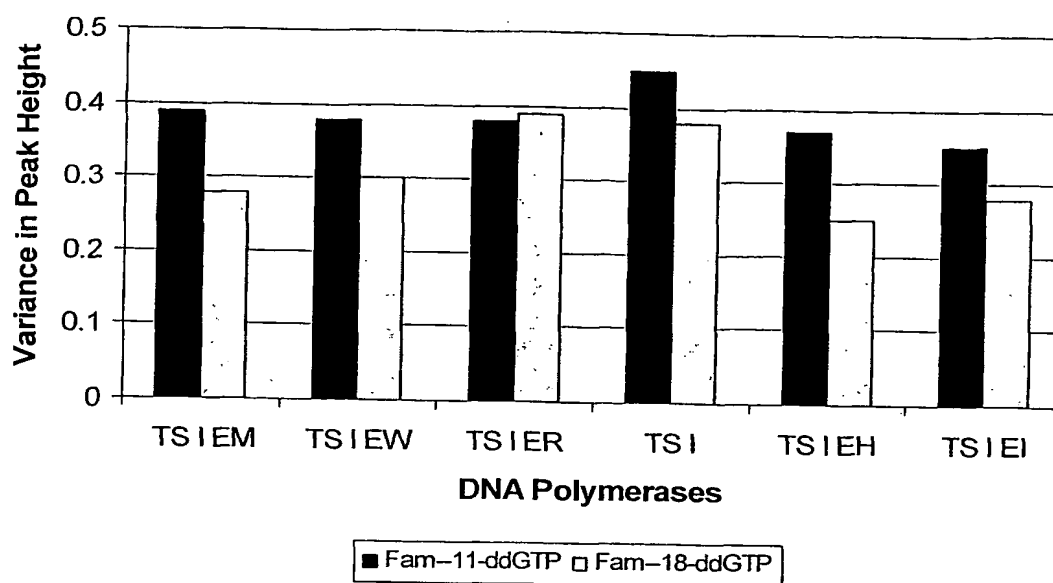


Figure 11: Sequencing band uniformity using different linker length FAM-ddGTP with Various Mutant DNA Polymerases.

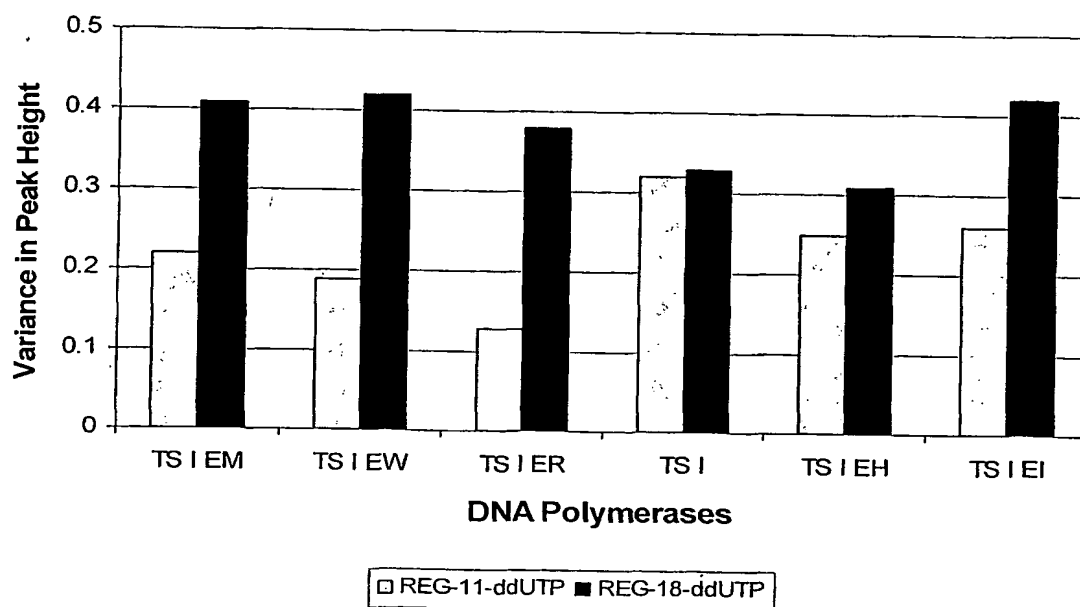


Figure 12: Sequencing band uniformity using different linker length REG-ddUTP with Various Mutant DNA Polymerases.

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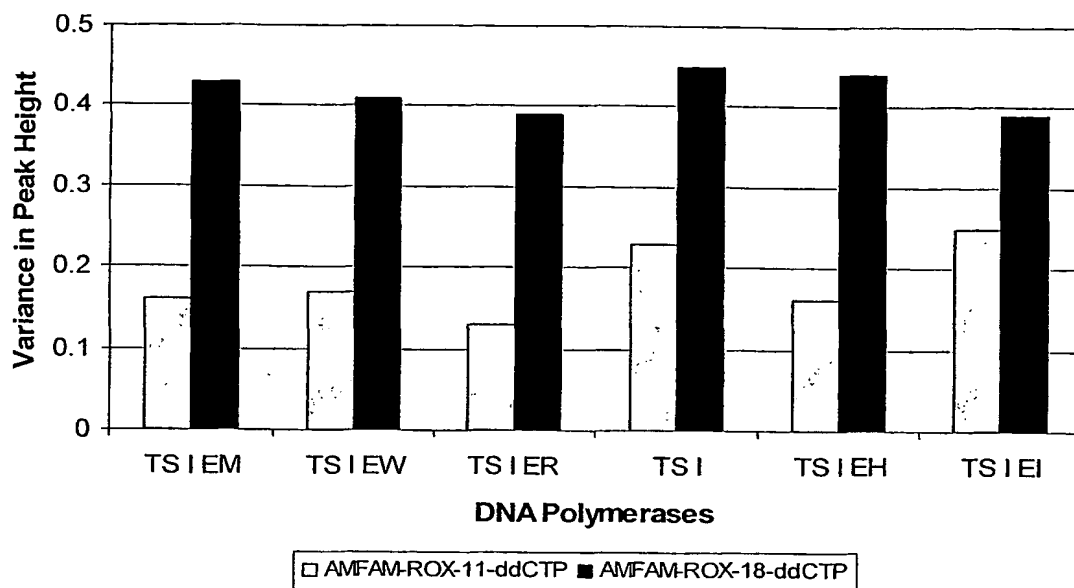


Figure 13: Sequencing band uniformity using different linker length AMFAM-ROX--ddCTP with various mutant DNA Polymerases.

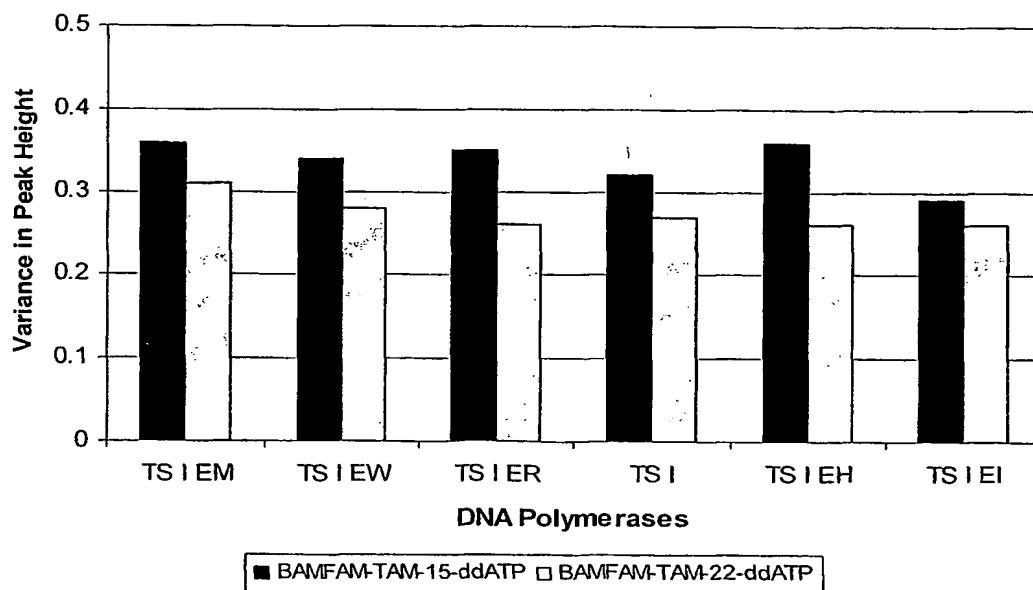


Figure 14: Sequencing band uniformity using different linker length BAMFAM-TAM--ddATP with various mutant DNA Polymerases.

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